



Air Quality Summary—July 2009



Baton Rouge Area

OZONE

There were three days with violations of the National Ambient Air Quality Standard (NAAQS) for ozone in the Baton Rouge area during the month of July 2009. See the chart below for detailed information.

Ozone Action Days: July 2—Code Orange/USG, July 3—Code Red/Unhealthy, July 4—Code Orange/USG

PM_{2.5}

There were no violations of the NAAQS for PM_{2.5} in the Baton Rouge area during the month of July 2009. Levels reading higher than normal at the Port Allen site may be due to construction occurring directly adjacent to the site. Please see the chart on the next page for detailed information on PM_{2.5} levels throughout the state in July.

Other Areas of the State

OZONE

There were three days with violations of the standard for ozone in both the New Orleans and Shreveport areas and one day in both the Lake Charles and Lafayette areas during the month of July 2009. Air quality levels reached code red/unhealthy on July 3 at the Shreveport Airport site and again on July 24 at the Carlyss site. See the chart below for detailed information.

Ozone Action Days: July 2—Code Orange/USG for Lake Charles and New Orleans areas, July 3—code Red/Unhealthy for the New Orleans area and Code Orange/USG for the Lafayette and Lake Charles areas

PM_{2.5}

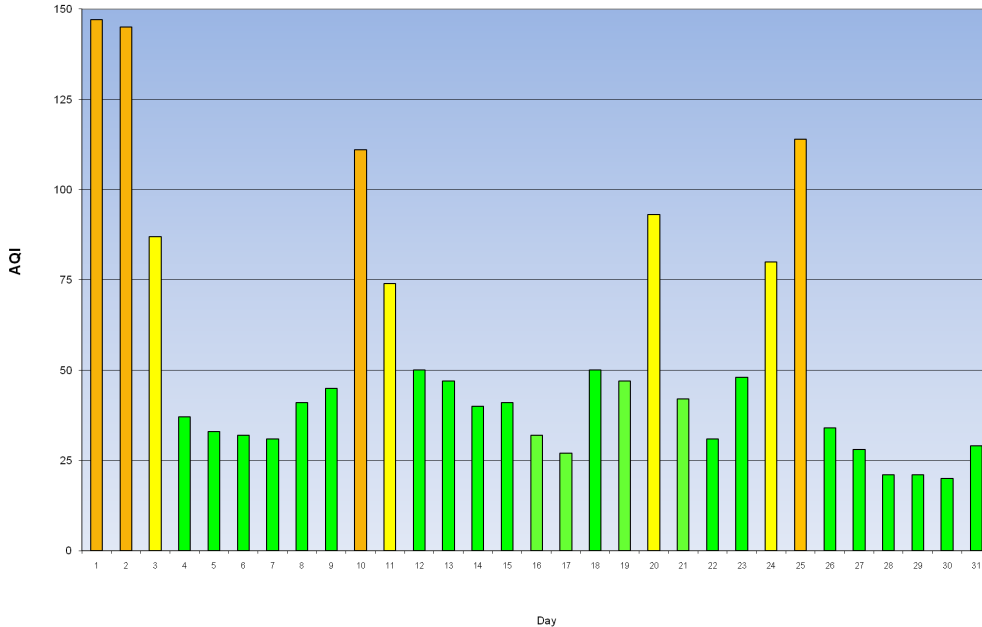
There were no violations of the NAAQS for PM_{2.5} for any area of the state during the month of July 2009. Please see the chart on the next page for detailed information on PM_{2.5} levels throughout the state in July.

Statewide 8-HR Ozone Readings /AQI Above 75 ppb

DATE	AQI	8-HR OZONE Concentration (ppb)	MONITORING SITE
7/2/09	145	93	French Settlement
	135	89	Madisonville
	111	80	LSU
	111	80	Chalmette High
	111	80	Dutchtown
	106	78	Garyville
	104	77	Kenner
	104	77	Lafayette
	104	77	Pride
7/3/09	151	96	Shreveport Airport
	109	79	Kenner
	104	77	Dixie

DATE	AQI	8-HR OZONE Concentration (ppb)	MONITORING SITE
7/10/09	111	80	New Roads
7/13/09	104	77	Shreveport Airport
7/24/09	151	96	Carlyss
	109	79	Shreveport Airport
7/25/09	114	81	French Settlement
	111	80	Garyville
	104	77	Hahnville
	104	77	Pride
	101	76	Dutchtown

**Baton Rouge Area Daily Maximum AQI For Ozone
July 2009**

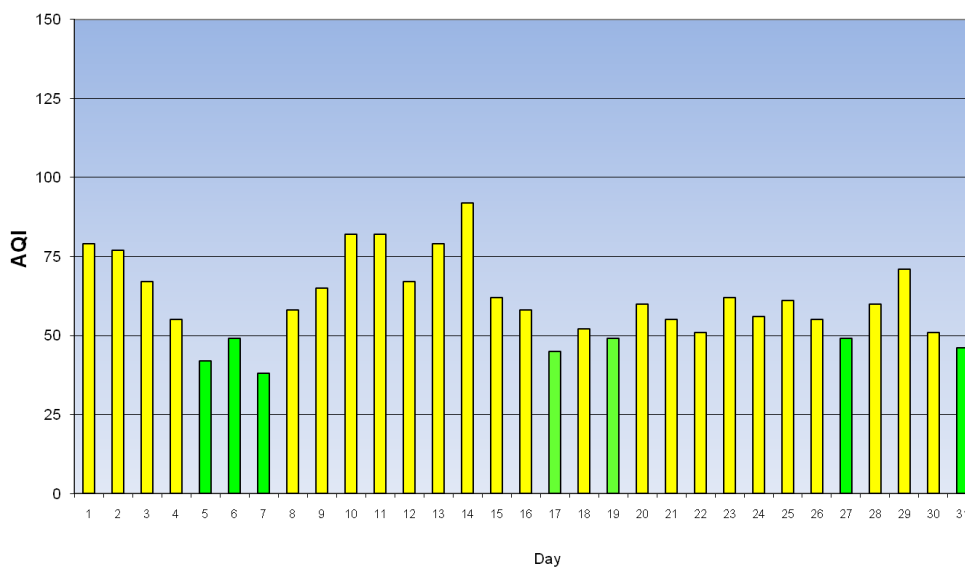


0-50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy

**Statewide High PM_{2.5} 24-Hour
Average Readings - July 2009**

DAY	UG/m3	AQI	SITE
1	27	79	Port Allen
2	26	77	Port Allen
3	21.8	67	Madisonville
4	17	55	Port Allen
5	12.8	42	Chalmette Vista
6	15	49	Port Allen
7	11.6	38	Chalmette Vista
8	18.4	58	Shreveport Airport
9	21	65	Port Allen
10	28	82	Port Allen
11	28	82	Port Allen
12	22	67	Port Allen
13	27	79	Port Allen
14	32	92	Port Allen
15	20	62	Port Allen
16	18.5	58	Chalmette Vista
17	13.8	45	Chalmette Vista
18	16	52	Port Allen
19	15	49	Port Allen
20	19	60	Port Allen
21	17	55	Port Allen
22	15.7	51	Chalmette Vista
23	20	62	Port Allen
24	17.7	56	Westlake
25	19.4	61	Shreveport Airport
26	17	55	Port Allen
27	15	49	Port Allen
28	19.2	60	Chalmette Vista
29	23.6	71	Westlake
30	15.6	51	Chalmette Vista
31	14.3	46	Kenner

**Statewide Daily Maximum AQI For PM_{2.5}
July 2009**



Baton Rouge Climate Summary—July 2009

**Prepared by: Jay Grymes*

(based on available preliminary data as of August 20 2009)

July 2009's monthly temperature averaged 83.8°F for Baton Rouge's Metro Airport, 2.1° above the 30-year norm. Although not as abnormally warm as June 2009, July's average monthly temperature continues the remarkable run of above-average monthly temperatures. July's 83.8°F ties the seventh warmest July for Baton Rouge since at least 1905 -- although it is noteworthy that July 2008 averaged 0.3°F warmer (5th warmest since 1905). With monthly temperatures averaging 2°F or more above the norm for six of 2009's seven months, it is not surprising to see that Baton Rouge currently is on a pace for one of its warmest years on record.

The unusually-dry weather that developed during May and June extended into early July, as did the run of oppressive afternoon heat. Daytime highs topped 95° during each of the first five days on July, including a record high of 102° for July 2nd. All but three days in the month reached the 90°s, with nine days at or above 95°F. Cooling degree-days (an index of cooling demand) totaled 588 degrees, roughly 10% above the July norm.

Clouds and rains developed during July 6-9 -- certainly not "drought-busters" but a sign that the dominant upper-level ridge that prompted June's drought was losing its hold on the lower Mississippi Valley. The remainder of July's days were a bit closer to long-term averages in terms of temperatures, clouds and rains. Even so, most of the extended baton Rouge metro area remained "in drought" as of month's end.

Table 1: Average "daylight hours" sky conditions (to 12,000 ft) during July 2009, based on automated ASOS observations from Baton Rouge's Metro Airport.

Sky Condition: Sunrise to Sunset (Sky Coverage)	Clear to Mostly Sunny (0/10ths – 3/10ths)	Partly Cloudy / Partly Sunny (4/10ths – 6/10ths)	Mostly Cloudy to Cloudy (7/10ths – 10/10ths)
No. Days	7	18	6

After a relatively sunny June, Table 1 shows that cloud-cover was far more substantial during July, with partly-to-mostly cloudy conditions dominating the month.

July daylight hours (official sunrise-to-sunset period, excluding 'Civil Twilight') declined from approximately 14.1 hours (July 1) to 13.6 hours (July 31).

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Table 2: July 2009 rainfall for selected rainfall reporting stations across the greater Baton Rouge metro area. (Data are preliminary and provided courtesy of the National Weather Service, the LSU Southern Regional Climate Center, and the LSU AgCenter.)

Rainfall-Recording Site	Monthly Rainfall	Monthly DFN	No. Days ≥ 0.01"	No. Days ≥ 1.00"
BR - Metro AP	4.65"	-1.31"	14	1
<i>NWS Cooperative Network Sites</i>				
BR - Concord Estates	5.56"	-0.32"	11	1
BR - Sherwood Forest	6.33"	+0.58"	15	2
Brusly 2 W	3.61"	-2.41"	11	1
Central	M	M	M	M
Clinton - LDAF	M	M	M	M
Denham Springs	7.67"	+1.78"	8	1
Gonzales	4.71"	-1.50"	13	2
Jackson 3 E	M	--	M	M
Livingston	8.12"	+2.79"	11	2
New Roads	4.15" (i)	-0.55"	9	1
Oaknolia	6.49"	+1.23"	12	2
Port Allen	M	M	M	M
Plaquemine 2 N	2.81" (i)	-2.54"	9	0
St. Francisville	M	M	M	M
Zachary	M	M	M	M
<i>LSU AgCenter LAIS Automated Stations</i>				
LAIS - Ben Hur Farm	3.58"	--	15	1
LAIS - Burden Plantation	5.21"	--	16	2
LAIS - St. Gabriel Res Sta	3.10"	--	16	0
<i>CoCoRaHS Volunteer Observers</i>				
Old Jefferson 0.9 W (LA-EB-21)	5.91"	--	18	1
Shenandoah 0.8 W (LA-EB-36)	6.05"	--	18	1
Monticello 3.0 ENE (LA-EB-19)	8.50"	--	16	2
Brownfields 5.8 NE (LA-EB-9)	5.04" (i)	--	8	2
Baton Rouge 2.5 E (LA-EB-27)	6.58"	--	15	3
Baton Rouge 2.7 SW (LA-EB-2)	4.76"	--	16	0
Zachary 3.5 WNW (LA-EB-28)	3.85"	--	15	0
LSU Campus (LA-EB-33)	3.63"	--	13	1

DFN - Departure-from-Normal

M - Monthly Report Unavailable

"--" - Normals Not Available

(i) - Monthly Report May Be Incomplete

(e) - Estimated Value

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Rainfall for July averages near 6" for the Baton Rouge metro area, making July one of the 'wetter' months of the year. Of the 18 reporting sites with complete records for July, only seven topped 6" of rain; five sites reported less than 4" of rain. July's regional average (unweighted) for these 18 stations is 5.46", with 5.39" as the median. Historical records indicate that Metro Airport averages rainfall on nearly half of all days during July; reports from the region (Table 2) show rainday counts ranging from as few as 8 days to as many as 18 days for the month.

Metro Airport's ASOS platform reported thunder on 14 dates during July 2009, compared to a long-term average of 15 days according to the Baton Rouge **"Normals, Means and Extremes"** (NOAA/NCDC). July 2009 records note 20 dates with fog (dominated by morning 'radiational' fogs), but "heavy" fog (visibility less than 1/4-mile) was only reported at the airport on July 23rd. The ASOS reported a monthly-average wind speed of 5.1 mph for July 2009, virtually identical to the month's 25-year average of 5.2 mph. Daily wind speeds averaged below 5.0 mph on 16 dates, including a run of 11-out-of-12 days between July 9-20. Although 12 days saw maximum sustained winds (durations of 2-minutes or more) reach or exceed 20 mph, there were no days during the month when the average speed reached 10.0 mph at Metro Airport.

The weekly ***U.S. Drought Monitor*** for the end of July (Fig. 3) shows a mid-state swath of parishes -- including metro Baton Rouge -- still experiencing "moderate drought" (D1), with the majority of the state remaining "drier than normal" for this time of year. Fortunately, moisture deficits have not reached extreme levels over the summer, and July rains around the state eased soil-moisture shortages for many northern, central and southern parishes. However, given the high environmental moisture demand at this time of year (evapotranspiration, ET, typically runs about 1.0" to 1.5" per week in July), a return of "normal" rainfall would not mean an end to regional and local moisture shortages. A period of above-normal rains would be required to fully erase current moisture deficits.

The Outlook:

Most of the Baton Rouge metro area received much-needed rain during July, and as of late July the upper-air ridging pattern that created the hot-and-dry conditions during May, June and early July appears to have weakened and shifted away from the region. Weather in the coming weeks is expected to return to something more typical for south Louisiana, but one- and three-month outlooks by the NWS Climate Prediction Center indicate slightly above-average chances for warmer-than-normal and drier-than-normal conditions to continue for the region.

The NWS Climate Prediction Center has now declared that an *El Niño* is 'officially' underway, with this "warm" phase of the ENSO cycle likely to persist through the 2009-2010 winter. Although ENSO phases have little impact on local weather during the summer and early autumn, *El Niño* conditions in the mid/late summer and early fall are associated with a modest reduction in tropical cyclone genesis over the Atlantic Basin, largely attributed to increased mid- and upper-level wind-shear over the basin.

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Figure 1: July 2009 Daily Max/Min Temperatures and Precipitation as recorded by the LSU AgCenter/LAIS Weather Station located at LSU-Ben Hur Farm (Nicholson Drive).

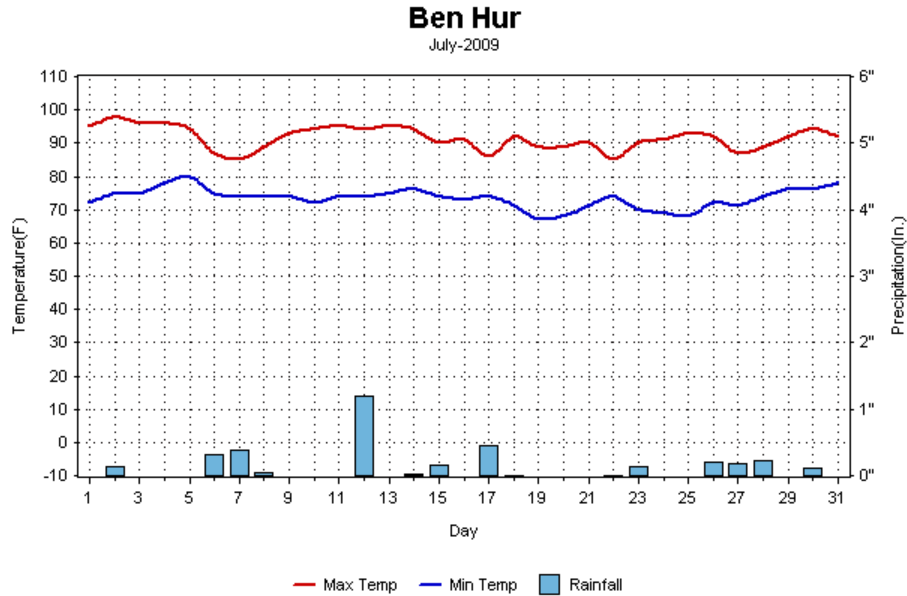
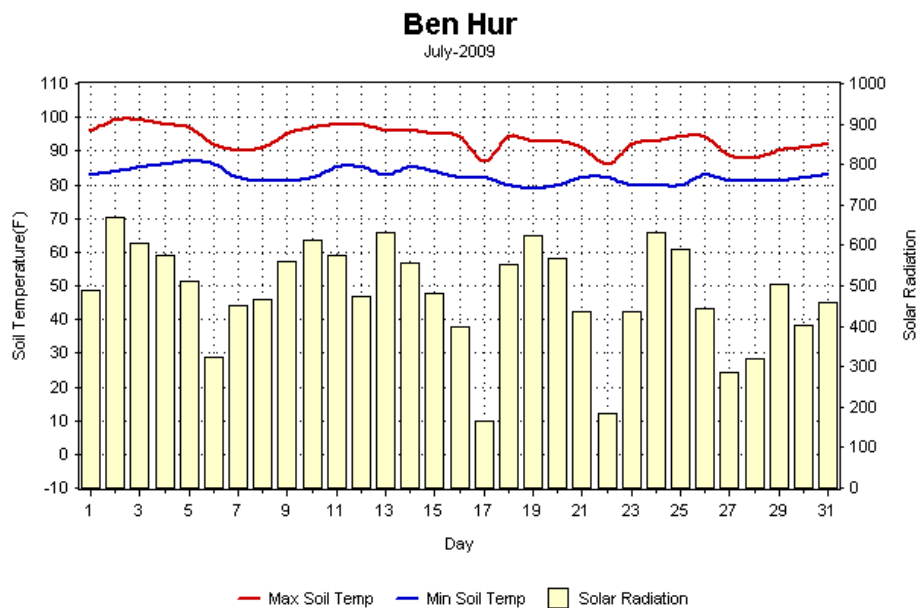
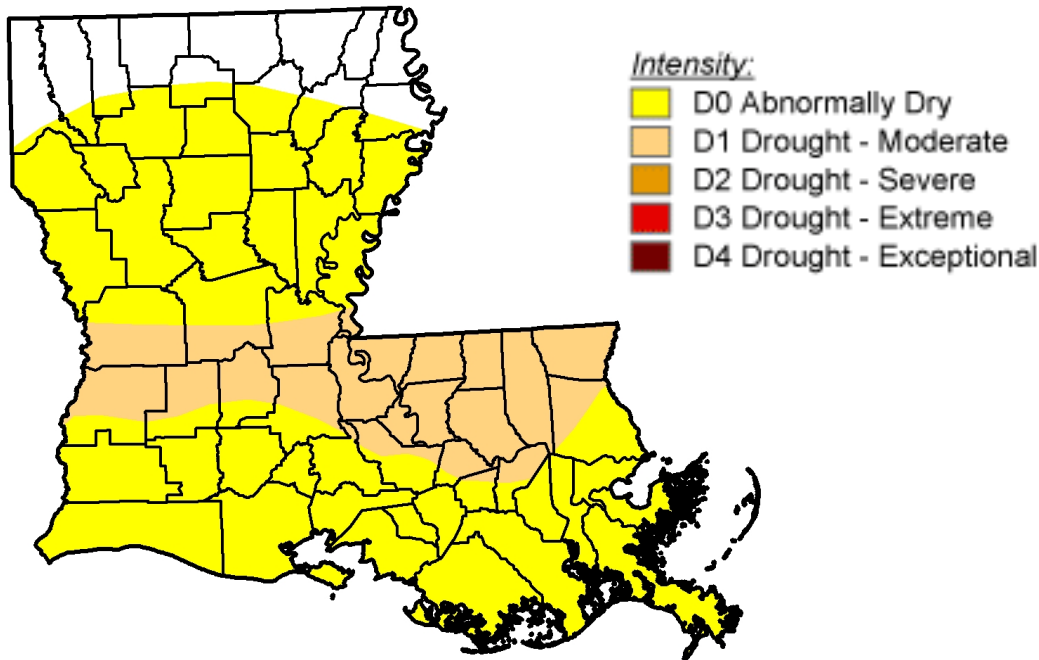


Figure 2: July 2009 Daily Solar Radiation and Max/Min Soil Temperatures (4 in. depth) as recorded by the LSU AgCenter/LAIS Weather Station located at LSU-Ben Hur Farm.



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Acknowledgements:

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- NWS Climate Prediction Center
- NWS Storm Prediction Center
- NWS Hydrometeorological Prediction Center
- NOAA/National Climatic Data Center (NCDC)
- WAFB-TV (Ch. 9), Baton Rouge

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20 August 2009

*Jay Grymes, LSU AgCenter Climatologist and WAFB Chief Meteorologist, provides the climatology portion of this report as a free service to DEQ and the citizens of Louisiana.